

**REMARKS**

In the Non-Final Office Action of December 17, 2004, claims 1-20 are pending. Claims 1, 14, and 20 are independent claims from which all other claims depend therefrom. Claims, 1, 14, and 20 have been amended.

Claims 1-3, 6-9, 11-16, 18, and 20 stand rejected under 35 U.S.C. 102(e) as being anticipated by Schofield et al. (U.S. Patent No. 6,498,620).

Amended claim 1 recites a vision-based object detection system for a vehicle that includes multiple vision sensing systems. The vision sensing systems include a frontal collision sensing system and one or more vision receivers and generate an object detection signal. A controller has multiple sensing system aid modules that correspond to each of the vision sensing systems. The controller selects and operates at least one of the sensing system aid modules in response to a vehicle parameter. The sensing system aid modules have multiple associated active operating modes and operate the vision sensing systems in at least one of the operating modes in response to the vehicle parameter.

The system of claim 1 provides a single sensing system with a single controller that has multiple sensing system aid modules. The controller utilizes the sensing system aid modules in association with multiple sensing system active operating modes. Also, the sensing system aid modules share the vision receivers in performing tasks associated with the multiple operating modes. In so doing, the system of claim 1 minimizes the number of components associated with and the complexity of the sensing systems of a vehicle.

Schofield discloses a rearview vision system that includes a pair of side rearwardly directed image capture devices 14 and a center rearwardly directed image capture device 16. The image devices 14 and 16 are utilized by an image processor 18 to generate a composite rear view of the vehicle 10 when in a reverse gear. A sample composite rear view is shown in Figure 3 of Schofield.

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Applicants submit that the system of Schofield operates in a single active mode. The system of Schofield is operational when in a reverse gear and inoperative when in a forward gear. This is similarly stated in col. 17, lines 44-47 of Schofield, wherein it is stated that the rear view image is not displayed when the vehicle is not in a reverse gear.

Applicants further submit that the image processor of Schofield does not include multiple sensing system aid modules. The Office Action simply states that Schofield discloses a controller comprising a plurality of sensing system aid modules, but provides no indication of where in Schofield this is disclosed. Applicants submit this is because a controller having multiple sensing system aid modules is not shown or disclosed by Schofield, nor can one infer the same. The image processor of Schofield operates in a single mode, specifically a reverse sensing mode. The image processor generates a rearward composite image, which only requires a single sensing system aid module or single controller. Besides, nowhere in Schofield is it shown or suggested that the image processor has multiple sensing system aid modules.

Also, nowhere in Schofield is it stated that the image processor 18 selects or operates multiple sensing system aid modules. The figures of Schofield show the image processor as a single box and throughout Schofield the image processor 18 is portrayed as a single module. The contents of the image processor are not disclosed; only the tasks performed by the image processor 18 are disclosed. However, since the image processor 18 is solely described with respect to the generation of a composite rear image and the adjustment thereof, it can be inferred that the image processor is and includes a single module for rearward surveillance.

Applicants also submit, as admitted in the Office Action, that Schofield fails to teach or suggest a frontal collision sensing system.

In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegrad Bros. V. Union Oil Co. of California*, 814 F.2d 628. Thus, since Schofield fails to teach or

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suggest each and every element of claim 1, claim 1 is novel, nonobvious, and is in a condition for allowance.

Claim 14 recites a method of performing multiple sensing system aids for a vehicle. The method includes generating an object detection signal via vision sensing systems. The vision sensing systems include a forward vision sensor. Multiple sensing system aid modules including a parking-aid module and corresponding to the vision sensing systems are operated via a single controller.

As stated above, Schofield fails to teach or suggest a frontal collision sensing system and thus fails to teach or suggest a forward vision sensor.

Applicants also submit that Schofield also fails to teach or suggest a parking-aid module. Although the rearview vision system of Schofield monitors an area rearward of a vehicle Schofield does not distinguish between rearward vehicle operation, pre-collision sensing, and parking. This differentiation is described in the specification of the present application and as such a reversing-aid module, a pre-collision sensing module, and a parking-aid module are also described, as well as the different tasks performed by each module. Schofield does not mention parking, tasks performed during parking, or a module that performs such tasks. Schofield also does not teach or suggest the differences between tasks performed while operating in a reversing-aid mode, a pre-collision sensing mode, or a parking-aid mode. Although a pre-collision sensing mode is not recited in claim 14, it is recited in claims 3, 9-11, 16-18, and 20, and thus is mentioned here for argument support thereof.

Schofield also does not teach or suggest the use of multiple sensing system aid modules. In Schofield a single image processor is disclosed that performs in a reverse sensing mode. The image processor performs as a single module and in a single mode.

Thus, Schofield also fails to teach or suggest each and every element of claim 14, therefore, claim 14 is also novel, nonobvious, and is in a condition for allowance.

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Claim 20 recites a vision-based object detection system for a vehicle. The system includes multiple vision sensing systems operating simultaneously in multiple modes selected from a reversing-aid mode, a parking-aid mode corresponding to both frontal and rearward detection, a frontal pre-collision sensing mode, an adaptive cruise control mode, a lane departure aid mode, and a lane-keeping aid mode. The system also includes a single vision processor that has multiple sensing system aid modules.

Applicants have shown above that Schofield only discloses a rearview vision system that operates in a single reverse sensing mode. Thus, one can only argue that Schofield suggests the operation of a reversing-aid mode, although the specifics thereof may be different. Schofield does not disclose the operation of a system in a parking-aid mode corresponding to both frontal and rearward detection, a frontal pre-collision sensing mode, an adaptive cruise control mode, a lane departure aid mode, or a lane-keeping aid mode. Thus, Schofield does not teach or suggest operating in two or more of the claimed modes.

Also, Schofield does not disclose a single vision processor that has multiple sensing system aid modules, as stated above.

Thus, Schofield also fails to teach or suggest each and every element of claim 20, therefore, claim 20 is also novel, nonobvious, and is in a condition for allowance.

Claims 4-5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schofield in view of King (U.S. Patent Pub. No. 2004/0061598).

Applicants submit that since claims 4-5 depend from claim 1, that they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons as put forth above with respect to claim 1.

Claims 10 and 17 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schofield.

Applicants submit that since claims 10 and 17 depend from claims 1 and 14, respectively, they are also novel, nonobvious, and are in a condition for

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allowance for at least the same reasons as put forth above with respect to claims 1 and 14.

The Office Action states that Schofield does not disclose a frontal collision sensing system. Applicants Agree. The Office Action further states that it would have been obvious to add one to the Schofield system. Applicants submit that whether this is true or not, the combination thereof would not allow one to arrive at the present invention. The combination does not teach or suggest the above stated nondisclosed limitations of claims 1 and 14 and also does not teach or suggest the operating of a frontal collision sensing system in any of the claimed operating modes. Schofield simply discloses the use of a rearview sensing system for viewing a rearward area of a vehicle. Schofield does not teach or suggest operating a front collision sensing system in a parking aid mode, a pre-collision sensing mode, an adaptive cruise control mode, a lane departure aid mode, or a lane-keeping aide mode. A frontal collision system may be operated in several different modes, as taught by the specification of the present application. Since Schofield does not disclose a frontal collision sensing system, it is not clear in what mode or modes the hypothetical frontal collision sensing system that is combined with Schofield would operate. The hypothetical frontal collision sensing system may operate in a mode other than that recited in claims 10 and 17.

Thus, Schofield alone or in combination with a hypothetical frontal collision sensing system fails to teach or suggest each and every element recited in claims 10 and 17 and the *prima facie* case of obviousness has not been met, as required under 35 U.S.C. 103(a) and as stated in MPEP 2143.

Claim 20 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Schofield in view of Okamoto (U.S. Patent No. 6,587,760).

The Office Action states that Schofield fails to disclose determining the vehicle velocity and operating the sensing system aid modules in response thereto. Applicants assume that the Examiner meant to refer to claim 19 and not claim 20 since claim 19 recites the limitations of determining whether the vehicle

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is traveling below a predetermined velocity and claim 20 does not recite such limitations or the like. Also, no rejection and accompanying arguments are provided for claim 19 in the Office Action. Applicants have prepared this response with such assumption being correct.

Claim 19 depends from claim 14, which Applicants have shown to be allowable. Claim 19 is allowable for at least the same reasons as put forth above for claim 14. In addition, since Schofield fails to disclose multiple sensing system aid modules the combination of Okamoto with Schofield would not allow one to arrive at the present invention. The combining of vehicle velocity determination and the operating of a single image processor in a single reverse operating mode does not teach or suggest the operation of multiple sensing system aid modules in response to a vehicle speed.

Furthermore, the combination of Schofield and Okamoto does not teach or suggest determining whether the vehicle is traveling below a predetermined velocity and performing multiple sensing system aid modules in response thereto. There is a difference between simply detecting vehicle speed and operating sensing systems in response to when a vehicle speed is below a predetermined velocity.

Thus, Applicants submit that none of the dependent limitations of claim 19 is taught or suggested by the combination of Schofield and Okamoto.

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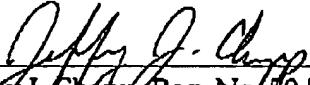
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In light of the amendments and remarks, Applicants submit that all the objections and rejections are now overcome. The Applicants have added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, she is respectfully requested to call the undersigned attorney.

Respectfully submitted,

ARTZ & ARTZ, P.C.

  
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Jeffrey J. Chepp, Reg. No. 30,579  
28333 Telegraph Road, Suite 250  
Southfield, MI 48034  
(248) 223-9500

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